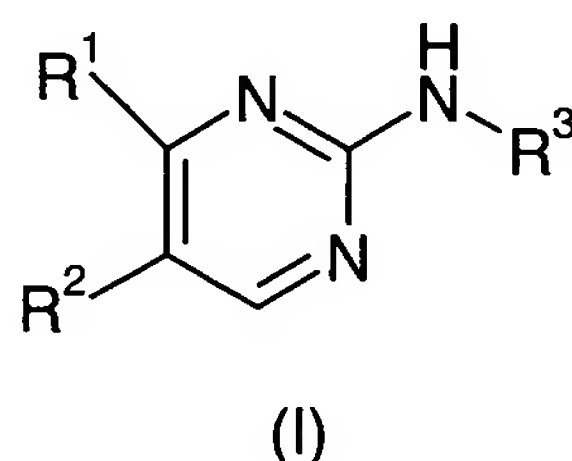


AMENDMENTS TO THE CLAIMS

Please amend claims 1-16, 18, 21, and 22. Please cancel claims 17, 19, and 20. Please also add new claim 23. Deletions appear in ~~striketrough font~~ and additions are underlined. The following listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A compound of formula (I)

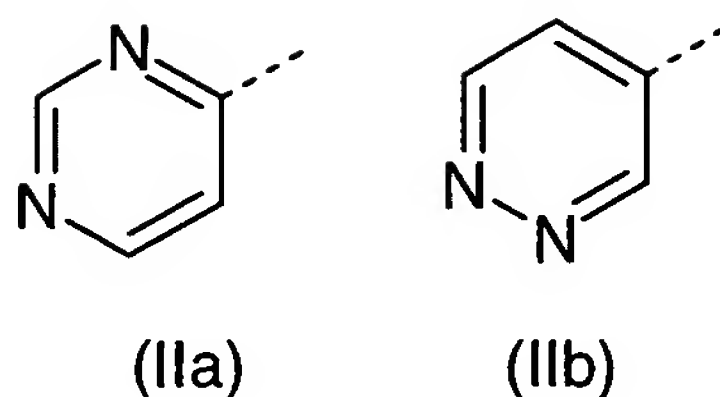


wherein

R¹ represents a monocyclic or polycyclic, aryl or heteroaryl group optionally substituted by one, two or three substituents ~~selected~~ chosen from the group ~~consisting of~~ halogen atoms, straight or branched, optionally substituted lower alkyl, hydroxy, straight or branched, optionally substituted lower alkoxy, -SH, straight or branched optionally substituted lower alkylthio, nitro, cyano, -NR'R'', -CO₂R', -C(O)-NR'R'', -N(R''')C(O)-R', and -N(R''')-C(O)NR'R'',

wherein R', R'' and R''' each independently represents a hydrogen atom or a straight or branched, optionally substituted lower alkyl group; or R' and R'' together with the atom to which they are attached form a cyclic group;

R² represents a monocyclic N-containing heteroaryl group ~~selected~~ chosen from the groups of formulae (IIa) ~~or~~ and (IIb):



wherein the groups of formula (IIa) and (IIb) ~~being~~ are each independently optionally substituted by one, two or three substituents ~~selected~~ chosen from ~~group consisting of~~ halogen atoms, straight or branched, optionally substituted lower alkyl, hydroxy, straight or branched, optionally substituted lower alkoxy, -SH, straight or branched optionally substituted lower alkylthio, nitro, cyano, -NR'R'', -CO₂R', -C(O)-NR'R'', -N(R''')C(O)-R', and -N(R''')-C(O)NR'R'',

wherein R', R'' and R''' each independently represents a hydrogen atom or a straight or branched, optionally substituted lower alkyl group; or R' and R'' together with the atom to which they are attached form a cyclic group.

R³ represents a monocyclic or polycyclic, heteroaryl group being optionally substituted by one, two or three substituents ~~selected~~ chosen from the ~~group consisting of~~ halogen atoms, straight or branched, optionally substituted lower alkyl, hydroxy, oxo, straight or branched, optionally substituted lower alkoxy, -SH, straight or branched optionally substituted lower alkylthio, nitro, cyano, -NR'R'', -CO₂R', -C(O)-NR'R'', -N(R''')C(O)-R', and -N(R''')-C(O)NR'R'',

wherein R', R'' and R''' each independently represents a hydrogen atom or a straight or branched, optionally substituted lower alkyl group; or R' and R'' together with the atom to which they are attached form a cyclic group;

or an N-oxide thereof or a pharmaceutically acceptable salt thereof;

2. (Currently Amended) A compound according to claim 1, wherein R³ represents ~~a~~ either

a monocyclic or polycyclic heteroaryl group comprising a nitrogen-containing six-membered ring; or

a monocyclic five-membered heteroaryl group not containing nitrogen in the ring structure,

~~wherein the each heteroaryl groups being~~ is independently optionally substituted by one, two or three substituents ~~selected~~ chosen from the group consisting of halogen atoms, straight or branched, optionally substituted lower alkyl, hydroxy, oxo, straight or branched, optionally substituted lower alkoxy, -SH, straight or branched optionally substituted lower alkylthio, nitro, cyano, -NR'R'', -CO₂R', -C(O)-NR'R'', -N(R''')C(O)-R', and -N(R''')-C(O)NR'R'',

wherein R', R'' and R''' each independently represents a hydrogen atom or a straight or branched, optionally substituted lower alkyl group; or R' and R'' together with the atom to which they are attached form a cyclic group.

3. (Currently Amended) A compound according to claim 2, wherein R³ represents a monocyclic or polycyclic heteroaryl group comprising a nitrogen-containing six-membered ring,
~~wherein the heteroaryl groups being~~ is optionally substituted by one, two or three substituents ~~selected~~ chosen from the group consisting of halogen atoms, straight or branched, optionally substituted lower alkyl, hydroxy, oxo, straight or branched, optionally substituted lower alkoxy, -SH, straight or branched optionally substituted lower alkylthio, nitro, cyano, -NR'R'', -CO₂R', -C(O)-NR'R'', -N(R''')C(O)-R', and -N(R''')-C(O)NR'R'',
wherein R', R'' and R''' each independently represents a hydrogen atom or a straight or branched, optionally substituted lower alkyl group; or R' and R'' together with the atom to which they are attached form a cyclic group.

4. (Currently Amended) A compound according to ~~any one of the preceding claims~~ claim 1, wherein R³ is ~~selected~~ chosen from the group consisting of pyridine, pyrimidine, pyridazine, isoquinoline, quinoline, naphthyridine, pyridine-2(1H)-one,

furan and thiophene; ~~all~~ each of them optionally substituted by one, two or three substituents ~~selected~~ chosen from the ~~group consisting of~~ halogen atoms, straight or branched, optionally substituted lower alkyl, hydroxy, oxo, straight or branched, optionally substituted lower alkoxy, -SH, straight or branched optionally substituted lower alkylthio, nitro, cyano, -NR'R'', -CO₂R', -C(O)-NR'R'', -N(R''')C(O)-R', and -N(R''')-C(O)NR'R'',

wherein R', R'' and R''' each independently represents a hydrogen atom or a straight or branched, optionally substituted lower alkyl group; or R' and R'' together with the atom to which they are attached form a cyclic group.

5. (Currently Amended) A compound according to claim 4, wherein R³ is ~~selected~~ chosen from the ~~group consisting of~~ pyridine and pyridine-2(1H)-one, ~~all~~ each of them optionally substituted by one, two or three substituents ~~selected~~ chosen from the ~~group consisting of~~ halogen atoms, straight or branched, optionally substituted lower alkyl, hydroxy, oxo, straight or branched, optionally substituted lower alkoxy, -SH, straight or branched optionally substituted lower alkylthio, nitro, cyano, -NR'R'', -CO₂R', -C(O)-NR'R'', -N(R''')C(O)-R', and -N(R''')-C(O)NR'R'',
- wherein R', R'' and R''' each independently represents a hydrogen atom or a straight or branched, optionally substituted lower alkyl group; or R' and R'' together with the atom to which they are attached form a cyclic group.
6. (Currently Amended) A compound according to ~~any one of claims 1 to 4~~ claim 1, wherein R³ is ~~selected~~ chosen from the ~~group consisting of~~ pyridine, pyrimidine, pyridazine, isoquinoline, quinoline, naphthyridine and pyridine-2(1H)-one, ~~all~~ each of them optionally substituted by a substituent ~~selected~~ chosen from the ~~group consisting of~~ halogen atoms, straight or branched, optionally substituted lower alkyl, oxo, straight or branched, optionally substituted lower alkoxy, straight or branched optionally substituted lower alkylthio and cyano groups.

7. (Currently Amended) A compound according to ~~any one of the preceding claims~~ claim 1, wherein R³ is ~~selected~~chosen from the ~~group consisting of~~ pyridine and pyridine-2(1H)-one, ~~all each of~~ them optionally substituted by a substituent ~~selected~~chosen from the ~~group consisting of~~ halogen atoms, straight or branched, optionally substituted lower alkyl, oxo, straight or branched, optionally substituted lower alkoxy, straight or branched optionally substituted lower alkylthio and cyano groups.
8. (Currently Amended) A compound according to ~~any one of the preceding claims~~ claim 1, wherein R¹ represents a group ~~selected~~chosen from phenyl, furan-2-yl, furan-3-yl, thien-2-yl, thien-3-yl, pyridin-2-yl, pyridin-3-yl and pyridin-4-yl, ~~all each of~~ them optionally substituted by one, two or three substituents ~~selected~~chosen from the ~~group consisting of~~ halogen atoms, straight or branched, optionally substituted lower alkyl, hydroxy, straight or branched, optionally substituted lower alkoxy, -SH, straight or branched optionally substituted lower alkylthio, nitro, cyano, -NR'R'', -CO₂R', -C(O)-NR'R'', -N(R''')C(O)-R', -N(R''')-C(O)NR'R'',
wherein R', R'' and R''' each independently represents a hydrogen atom or a straight or branched, optionally substituted lower alkyl group; or R' and R'' together with the atom to which they are attached form a cyclic group.
9. (Currently Amended) A compound according to claim 8, wherein R¹ represents a group ~~selected~~chosen from phenyl, furan-2-yl, furan-3-yl and thien-2-yl, ~~all each of~~ them optionally substituted by an halogen atom.
10. (Currently Amended) A compound according to claim 9, wherein R¹ represents a group ~~selected~~chosen from unsubstituted furan-2-yl and unsubstituted thien-2-yl.
11. (Currently Amended) A compound according to ~~any one of the preceding claims~~ claim 1, wherein R² represents a pyrimidinyl or pyridazinyl group; wherein the pyrimidinyl or pyridazinyl group ~~which may be~~ optionally substituted by one, two or

three substituents ~~selected~~chosen from ~~group consisting of~~ halogen atoms, straight or branched, optionally substituted lower alkyl, hydroxy, straight or branched, optionally substituted lower alkoxy, -SH, straight or branched optionally substituted lower alkylthio, nitro, cyano, -NR'R'', -CO₂R', -C(O)-NR'R'', -N(R''')C(O)-R', -N(R''')-C(O)NR'R'',

wherein R', R'' and R''' each independently represents a hydrogen atom or a straight or branched, optionally substituted lower alkyl group; or R' and R'' together with the atom to which they are attached form a cyclic group.

12. (Currently Amended) A compound according to claim 11, wherein R² represents a pyrimidinyl or pyridazinyl group; wherein the pyrimidinyl or pyridazinyl group is ~~which may be~~ optionally substituted by a straight or branched, optionally substituted lower alkylthio group.

13. (Currently Amended) A compound according to claim 12, wherein R² represents an unsubstituted pyrimidin-4-yl or an unsubstituted pyridazin-4-yl group.

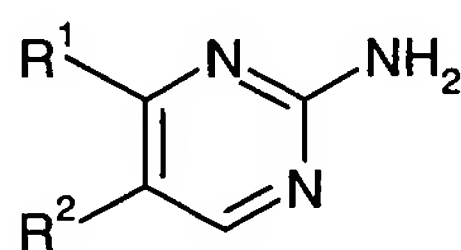
14. (Currently Amended) A compound according to ~~any one of the preceding claims,~~ claim 13, wherein R¹ represents a group ~~selected~~chosen from unsubstituted furan-2-yl and unsubstituted thien-2-yl, R² represents an unsubstituted pyrimidin-4-yl or an unsubstituted pyridazin-4-yl and wherein R³ is ~~selected~~chosen from the group consisting of pyridine, pyrimidine, pyridazine, isoquinoline, quinoline, naphthyridine and pyridine-2(1H)-one, all of them optionally substituted by a substituent ~~selected~~chosen from the group consisting of halogen atoms, straight or branched, optionally substituted lower alkyl, oxo, straight or branched, optionally substituted lower alkoxy, straight or branched optionally substituted lower alkylthio and cyano groups.

15. (Currently Amended) A compound according to claim 1, chosen from ~~which is one of:~~

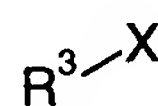
- 4'-(2-furyl)-*N*-pyridin-3-yl-4,5'-bipyrimidin-2'-amine
- 4'-(2-furyl)-*N*-(6-methoxypyridin-3-yl)-4,5'-bipyrimidin-2'-amine
- 4'-(2-furyl)-*N*-pyridin-2-yl-4,5'-bipyrimidin-2'-amine
- *N*-(6-fluoropyridin-3-yl)-4'-(2-furyl)-4,5'-bipyrimidin-2'-amine
- 4'-(2-furyl)-*N*-(4-methylpyridin-3-yl)-4,5'-bipyrimidin-2'-amine
- *N*-pyridin-3-yl-4'-thien-2-yl-4,5'-bipyrimidin-2'-amine
- 4'-(3-fluorophenyl)-*N*-pyridin-3-yl-4,5'-bipyrimidin-2'-amine
- 4'-(3-fluorophenyl)-*N*-(6-methoxypyridin-3-yl)-4,5'-bipyrimidin-2'-amine
- 4'-(2-furyl)-*N*-(6-methoxypyridin-3-yl)-2-(methylthio)-4,5'-bipyrimidin-2'-amine
- 4'-(3-fluorophenyl)-2-(methylthio)-*N*-pyridin-3-yl-4,5'-bipyrimidin-2'-amine
- 4-(2-furyl)-5-pyridazin-4-yl-*N*-pyridin-3-ylpyrimidin-2-amine
- 4'-(2-furyl)-*N*-(1-oxidopyridin-3-yl)-4,5'-bipyrimidin-2'-amine
- 4'-(2-furyl)-*N*-pyrimidin-5-yl-4,5'-bipyrimidin-2'-amine
- 4'-(2-furyl)-*N*-(5-methoxypyridin-3-yl)-4,5'-bipyrimidin-2'-amine
- 4'-(2-furyl)-*N*-(6-methylpyridin-3-yl)-4,5'-bipyrimidin-2'-amine
- 4'-(2-furyl)-*N*-pyrazin-2-yl-4,5'-bipyrimidin-2'-amine
- 5-{{4'-(2-furyl)-4,5'-bipyrimidin-2'-yl}amino}nicotinonitrile
- 4'-(2-furyl)-*N*-(1-oxidopyrimidin-5-yl)-4,5'-bipyrimidin-2'-amine
- 4'-(2-furyl)-*N*-[2-(methylthio)pyrimidin-4-yl]-4,5'-bipyrimidin-2'-amine
- *N*-[6-(benzyloxy)pyridin-3-yl]-4'-(2-furyl)-4,5'-bipyrimidin-2'-amine
- 5-{{4'-(2-furyl)-4,5'-bipyrimidin-2'-yl}amino}pyridin-2(1*H*)-one
- 4'-(2-furyl)-*N*-1,6-naphthyridin-8-yl-4,5'-bipyrimidin-2'-amine
- 4'-(2-furyl)-*N*-isoquinolin-4-yl-4,5'-bipyrimidin-2'-amine
- 4'-(2-furyl)-*N*-quinolin-3-yl-4,5'-bipyrimidin-2'-amine
- 4'-(3-furyl)-*N*-pyridin-3-yl-4,5'-bipyrimidin-2'-amine
- 4'-(3-furyl)-*N*-pyrimidin-5-yl-4,5'-bipyrimidin-2'-amine
- *N*-pyrimidin-5-yl-4'-(2-thienyl)-4,5'-bipyrimidin-2'-amine
- *N*-(1-oxidopyridin-3-yl)-4'-(2-thienyl)-4,5'-bipyrimidin-2'-amine
- 5-pyridazin-4-yl-*N*-pyridin-3-yl-4-(2-thienyl)pyrimidin-2-amine; and

- 4-(2-furyl)-5-pyridazin-4-yl-N-pyrimidin-5-ylpyrimidin-2-amine.

16. (Currently Amended) A process for producing a compound of formula I as defined ~~claimed in any one of claims 1 to 15~~ claim 1, wherein a compound of formula (IX) where R^1 and R^2 are as hereinbefore defined is coupled with a compound of formula (III); wherein R^3 is as hereinbefore defined and X is a halogen atom, preferably bromine, iodine or chlorine



(IX)



(III)

and optionally converting the resulting compound into an N-oxide thereof or a pharmaceutically acceptable salt thereof.

17. (Cancelled) A compound according to ~~any one of claims 1 to 15~~ for use in the treatment of a pathological condition or disease susceptible to amelioration by antagonism of the adenosine $\text{A}_{2\text{B}}$ receptor.
18. (Currently Amended) A pharmaceutical composition comprising a compound as claimed in claim 1 defined in ~~any one of claims 1 to 15~~ in admixture with a pharmaceutically acceptable diluent or carrier.
19. (Cancelled) Use of a compound as defined in ~~any one of claims 1 to 15~~ in the manufacture of a medicament for the treatment of a pathological condition or disease susceptible of being improved by antagonism of the $\text{A}_{2\text{B}}$ adenosine receptor.
20. (Cancelled) Use according to ~~claim 19~~, wherein the pathological condition or disease is asthma, bronchoconstriction, allergic diseases, hypertension, atherosclerosis, reperfusion injury, myocardial ischemia, retinopathy, inflammation,

~~gastrointestinal tract disorders, cell proliferation disorders, diabetes mellitus, and/or autoimmune diseases.~~

21. (Currently Amended) A method for treating a subject afflicted with a pathological condition or disease susceptible to amelioration by antagonism of the A_{2B} adenosine receptor, ~~which comprises~~ comprising administering to said subject an effective amount of a compound as claimed in claim 1 ~~defined in any one of claims 1 to 15.~~
22. (Currently Amended) A method according to claim 21, wherein the pathological condition or disease is chosen from asthma, bronchoconstriction, allergic diseases, hypertension, atherosclerosis, reperfusion injury, myocardial ischemia, retinopathy, inflammation, gastrointestinal tract disorders, cell proliferation disorders, diabetes mellitus, and/or autoimmune diseases.
23. (New) A process according to claim 16, wherein the halogen atom is chosen from bromine, iodine and chlorine.